Program 13C-2

Conventional Cottons From The University Of Arkansas

Presented by Dr. Fred Bourland
Center Director/Professor, University of Arkansas

The widespread occurrence of glyphosate-resistant pigweeds has forced many Arkansas cotton producers to return to conventional weed control programs. Thus, some see conventional cottons as a way to reduce production costs by avoiding the Round-up Ready technology fee. With the introduction of two new insecticides, technology fees associated with Bt cottons might also be avoided in areas with low worm pressure. Due to low demand, well-adapted conventional varieties have not been available. In response to this need, Arkansas Agricultural Experiment Station is releasing a conventional variety that has demonstrated high yields, early maturity and exceptional fiber quality.

Program 4C-2

Effect Of Long-Term Conservation Tillage Rotations On Crop Yields And Soil Physical And Chemical Properties

Presented by Charles Burmester
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Introduction

A replicated cotton rotation experiment was established in 1979 and for the past 30 years has provided valuable information to farmers in the Tennessee Valley region in Northern Alabama. The comparison of continuous cotton production with one year rotations of corn, soybeans or wheat/double-cropped soybeans have been consistent since 1979. In 1988, two continuous no-till cotton plots and fall tillage (chisel) prior to planting a wheat cover crop were established. The two no-tillage plots consist of planting into old cotton stubble or into a wheat cover crop. In 1994 all plots except continuous cotton were changed to no-tillage, and the row spacing for cotton, corn and soybeans were reduce from 40 to a 30 inches.

Yield Results

It is important to note that this rotation test site, located on a Decatur silt loam soil, has developed no major disease or nematode problems during its 32 year history. Cotton yield responses to rotations were low (2-7%) during the first eight years of the study (Table 1). Cotton yield response to rotations increased slightly during the 1988-1994 time period. The biggest cotton yield increase (13%) was found in the wheat and double-cropped soybean rotation (Table 1). The no-till cotton yields during this period were disappointing, especially where cotton yields were reduced by 2% when planted into old cotton stubble (Table 1). The 1995-2005 time periods saw many changes in cotton production including Bt and Roundup Ready cotton development. Cotton yield response to rotations increased greatly this period (Table 1). All rotations except corn produced double digit increases in cotton yields (Table 1). These increases coincided with all the treatments except continuous cotton planted with conservation tillage. The 2006-2010 time periods contained two major drought years (2006-2007) that reduced cotton yield responses greatly. Even with these two non-responsive years,